university of groningen

University Medical Center Groningen

University of Groningen

Time-place learning

Mulder, Cornelis

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2015

Link to publication in University of Groningen/UMCG research database

Citation for published version (APA):
Mulder, C. (2015). *Time-place learning: Consequences of circadian system perturbations and aging*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen.

Copyright
Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment.

Take-down policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): http://www.rug.nl/research/portal. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Download date: 05-05-2023

Stellingen behorende bij het proefschrift

1. All transpires in the dimensional space of time and place. Therefore, representations of spatial and temporal coordinates of events likely constitute an evolutionary conserved organizing principle of memory – *modified from Jason A.R. Carr, 2001*

2. Time-Place learning is a discriminating paradigm to study the role of known clock genes on a functional behavioural level **(chapter 3 of this thesis)**

3. Our failure to localize the single primary clock that underlies circadian Time-Place learning strengthens the hypothesis of a distributed underlying clock system **(chapter 4 of this thesis)**

4. What's learned in the cradle lasts till the tomb, also holds for mice **(chapter 5 of this thesis)**

5. Future studies on Time-Place learning should focus on hippocampus-specific clock gene knockout mice and alterations of clock gene expression in the hippocampus with aging **(chapters 4, 5 and 6 of this thesis)**

6. An automated Time-Place Learning paradigm is required to increase the number of animals per experiment, reduce experimenter-induced variation, and detect more delicate differences in learning curves **(appendix I of this thesis)**

7. The consequences of living at odds with the environmental day/night cycle are still underestimated

8. Every cell has its influence in the complex hierarchy of the circadian system, which can therefore be seen as a beautiful demonstration by nature that democracy works when all voices are being appreciated

9. A PhD project can induce early Alzheimer's symptoms: often you will feel lost in time and space

10. The scientist studies the brain and behavior because he takes pleasure in it, and he takes pleasure in it because it is beautiful – *Modified from Henri Poincaré*